

MARINES SCUTTLEBUTT

> Teaching Old Shotguns New Tricks

MCWL Tests New Way to 'FRAG'ment Doors

Among the many new experimental technologies at the Marine Corps Warfighting Laboratory, the smallest, by far, is the 12-gauge high explosive round called the FRAG-12.

Designed to function as a shotgun-fired grenade, the FRAG-12 might give the good old shotgun a whole new set of missions. The FRAG-12 gives the best "bang for the buck" by improving the combat effectiveness of shotguns in urban areas by knocking out door locks, stopping vehicles at roadblocks and checkpoints, guarding against barricade attacks, and remote probing of potential Improvised Explosive Devices.

The new round pulls off the "bang" by way of a standard three-inch 12-gauge cartridge case and propellant, firing a fin-stabilized 19 mm warhead. The projectile arms three meters from the muzzle and fires upon impact with sufficient explosive power to make one-inch holes in quarter inch thick cold-rolled steel plates.

When the FRAG-12 round is fired, four fins open to stabilize the round and the safety rotates the firing mechanism into its armed position. After that, all that's left to do is to strike the target, knocking a fist-sized hole in whatever it hits. Because it is fin-stabilized, it has a longer effective range than most shotgun rounds – reliably hitting window-sized targets at ranges of



150 meters and more. The FRAG-12 also offers an armor-piercing projectile with a shaped charge configuration designed to penetrate a half-inch of steel armor.

After the FRAG-12 completes its safety tests, the Marine Corps Warfighting

Lab hopes to field experimental lots of the FRAG-12s and evaluate the rounds against real-world targets. Given the results obtained so far, this may be poised to become a must-have addition to the urban warrior's shotgun magazine! **M**

> CATS...on Every Battlefield

New Tourniquet System is an Improvement Over Old Rubber Standby



Marines engaged in combat operations will soon replace their current rubber tourniquets with new, lighter, more effective ones.

The U.S. Army Institute for Surgical Research recently evaluated nine tourniquets and

found three to be 100 percent effective. But, only one made the choice to be carried by Marines into combat – the Combat Application Tourniquet System.

One of the benefits of the CATS is that it can be operated

with one hand. Plus, it is lightweight, adding about as much weight as a small cell

phone. It has a strap-style design with a built-in rod for tightening and Velcro strap for securing. Unlike the old rubber-style tourniquet, which can deteriorate over time, the CATS is made of cloth and plastic

and only costs about \$18.

The CATS is touted as the most durable, easy to use and lightest tourniquet for use in the field. Plans are in the works to issue CATS to every Marine who has been trained in the Combat Lifesaver Course and all corpsmen.

With casualties resulting from blood loss as the leading cause of battlefield death, the CATS is a certain ally. **M**

▼ No More Black, White Pasties

Say So Long to the Pits!

In the butts, pulling targets, marking hits, scoring shots and dishing the score for rifle qualification may no longer seem like the pits at the Starlite Range on Marine Corps Recruit Depot Parris Island, S.C., thanks to the Location of Miss and Hit target system.

LOMAH is an automatic target system that detects and records the passage of all rounds that are fired within its detection zone. Individual monitors in the LOMAH target system are connected to a master computer that views shooters' progress when firing. The system contains six supersonic sensors that detect whether or not a round impacts a target surface. Sensors located around the target also detect rounds that miss the target surface.

Shooters view their progress on monitors at the firing line. The monitors will display a silhouette of the target, showing the location of shot impacts.

The computer automatically calculates the number of rounds that hit the target as well as the shooter's score. When an excessive number of rounds strike the target, the main computer is notified to sort out an overall range solution. The system is guaranteed to work in rain, snow or even hail and has a 99.5 percent probability of completing an eight-hour training day without equipment failure.



The LOMAH target system can reduce the number of Marines needed in the pits pulling targets during marksmanship training.

Installment of the system on Parris Island is still under consideration but it is already in use at Marine Corps Air Station Miramar, Calif., which is the largest LOMAH range in North America. **M**

The United States is honoring the Marine Corps and all Marines who have sacrificed and contributed in service to the nation with a new commemorative coin.

Public Law 108-291, signed Aug. 6, 2004, authorizes the minting of a silver dollar to commemorate the 230th anniversary of the United States Marine Corps.

The coins are intended to recognize that the Continental Congress authorized the raising of two battalions of American Marines Nov. 10, 1775, an act that set in motion the institution now known as the United States Marine Corps. From the nation's birth to present day, Marines represent a proud culture of service and contribution in defense of the values and freedoms at the heart of the American experience.

The public law that author-

ized the coins minting attests that Marines continue to exemplify the warrior ethos that has made the Corps a fighting force with an international reputation. The philosophy of the Corps – and of the hundreds of thousands of men and women who have earned the title “Marine” over the last 230 years – is stated simply in its core values: Honor. Courage. Commitment.

The commemorative Marine Corps silver dollars will be issued, in both proof and uncirculated condition, only



during 2005. 500,000 of the coins will be produced and surcharges from the sale of each coin are authorized for the creation of the National Museum of the Marine Corps at Quantico, Va. Visit www.usmc.museum.org for more information about the National

Museum of the Marine Corps or the U.S. Mint commemoratives special program at www.usmint.gov/mint_programs.

Coins are tentatively scheduled to be released in summer 2005. **M**

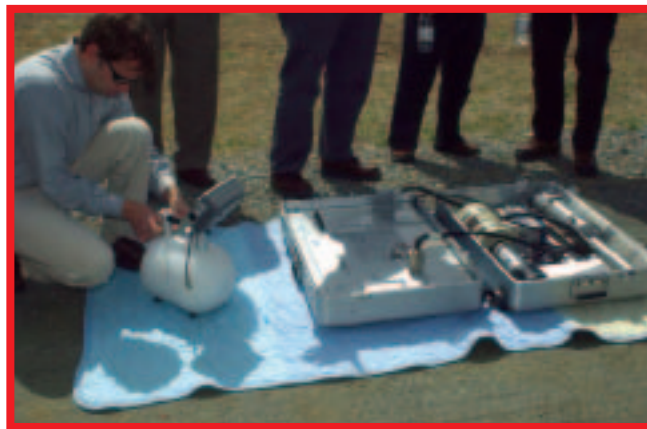
▼ Sieigma Sniffs Out Threats

Explosive-Seeking Suitcase May Join Marine Tool Kit

An aluminum suitcase and remote monitor may soon help Marines detect explosive material even behind a steel door and up to 50 feet away, aiding Marines in the fight against improvised explosive devices.

Known as Sieigma 3E3, the James Bond-like device can detect explosive chemicals after a one to five minute exposure with up to 98 percent accuracy.

The Sieigma 3E3 is the world's first and only stoichiometric-based system that can be used without a lab and test tubes, according to Dr. Bodgan Moglich, chief executive officer of Hi Energy Technologies Inc. Stoichiometry is the chemical ability to decipher the chemical formulas of unknown substances



In development since 1996, the Sieigma 3E3 is housed in an unmarked aluminum suitcase with wheels. It is hooked to a rugged, water-resistant laptop computer by way of a fiber-optic cable.

To “sniff-out” explosives, the Sieigma 3E3 emits a small amount of nuclear radiation

that reacts to the chemical makeup of an object. The Sieigma 3E3 also has a bulk detector, which lowers the amount of false alarms. This bomb-sniffing suitcase could be a welcome new member of the Marine Corps family. **M**

▼ Electric Firepower

Rail Gun May Boost Tank's Lethality

The clinking of ammo, the punch of the rail gun, mine-launchers, power-ups, ammo regeneration and invulnerability – if this sounds a little over the top for real combat, it is. This is the language of computer gamers, a group that, in this case, shares a possible favorite weapon of choice with real life warriors – the rail gun.

The rail gun, chosen staple of games like “Quake” and “Terminator 3,” may soon find its way into reality as the Corps considers an electromagnetic gun, or rail gun, to replace the M-1A1 Main Battle Tank's 120 mm M-256 main gun. A great way to replace such a powerful tool is to provide an even better alternative, in this case having a gunpowder-less “gun” that uses

electromagnetic propulsion to fire a projectile capable of reaching speeds of thousands of miles per hour in less than a second.

“The EM gun would be a welcome addition to the fleet,” said Col. Dennis W. Beal, Marine Corps program manager for tanks. “We’ve reached the limits of the 120 mm gun. Even the most advanced explosive-reactive armor will not be able to withstand EM munitions. The Pentagon allocated funds for a Marine EM gun test by 2008, said Beal. If successful, it would be integrated in a tank by 2015, he added.

With just one moving part, the armature, to hurl the projectile, two copper rails and a power supply with several million amperes, the Raytheon

Company and the Naval Surface Warfare Center recently used electromagnetic technology to launch an 18 Megajoule-guided projectile. During the test, the propellant charge impacted the projectile like a 40-ton hammer traveling 70 mph, instantly accelerating it to 1,875 mph, said Brian

O’Cain, testing manager. It traveled 39 miles in less than four minutes and could have gone at least 50, he added.

That’s like hurtling a Ford Escort from Marine Corps Base Quantico, Va., to the Washington Monument in less time than a Super Bowl commercial break. **M**

SHORT COUNT

138 – Dollars was the base pay of a sergeant major in the Marine Corps in 1942.

1940 – The year the Small Wars Manual was compiled and published. An original copy of the 1940 Small Wars Manual was presented to the Expeditionary Warfare School, Marine Corps Base Quantico, Va., April 28, 2005.

2 – The number of floors Lance Cpl. Richard E. Ryba fell while clearing houses with his platoon commander in Fallujah during Operation Al Fajr Nov. 8, 2004. The 24-year-old radio operator from Sheppard, Texas, was back with his unit clearing the streets of Fallujah within 12 hours after the fall.

14,000-24,000 – The weight range, in pounds, of six Russian armored vehicles lifted by a CH-53E Super Stallion from Marine Heavy Helicopter Squadron 465 in Iraq May 2. The helicopter hauled the vehicles from the airfield at Al Asad to a test firing range.

40 – The number of days of the “Shamal,” which happens in May and part of June in all of western Iraq and most of southern Iraq. During Shamal winds gusting at sustained rates of up to 17-35 mph will blow from the west-northwest for days at a time.

250+ – Marines and sailors, from Marine Corps Air Station Iwakuni, Japan, arrived at Udon Thoni, Thailand, April 20 to participate in the joint, combined Cobra Gold 2005 exercise held May 2-15.

30 – Years since the last U.S. helicopter lifted off the roof of the U.S. Embassy in Saigon, South Vietnam, marking the official end of the Vietnam War.

800 – Packages and bags filled with letters received and sent to appropriate units at Marine Corps Base Camp Kinser, Okinawa, Japan, on an average day. The load nearly doubles to 1,500 pieces on Mondays.